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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of

PHILIP R. WESTBROOK ET AL.

Patent No.: 6,811,538 B2

Issued: November 2, 2004

Serial No: 10/040,937

Filed: December 28, 2001

For: SLEEP APNEA RISK
EVALUATION

Examiner: Patricia C. Mallari

Group Art Unit: 3736

Client ID/Matter No: ABMON 64568

January 21, 2005

Los Angeles, California 90045

REQUEST FOR CERTIFICATE OF CORRECTION

Certificate of Correction Department
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Certificate
JAN 31 2005
of Correction

Dear Sir:

The above-identified patent has been found to have the errors set forth in the enclosed Certificate of Correction. It is requested that this Certificate of Correction be issued and returned to us. Since these errors occurred in both the final printing phase of the patent and in the final application, a check in the amount of \$100.00 is enclosed to cover the necessary fees. Should the Office determine that additional fees are needed, please charge Deposit Account No. 06-2425.

01/27/2005 CNGUYEN 00000031 6811538 100.00 OP
01 FC:1811

The errors are verifiable in the patent application file as follows:

ERROR

APPLICATION FILE

Column 10, line 41, delete "ate" and insert --rate--.

Applicant error.

Column 17, line 4, after " $(N_{\max}-N_{\min})/$ " insert --(--.

Patent Application filed on December 28, 2001. See Attachment A.

Column 18, line 48, delete "s ".

Applicant error.

Column 26, line 15, delete "reference" and insert --referenced--.

Applicant error.

Column 27, line 25, delete "of the patient".

Applicant error.

Column 28, line 31, delete "oxyhemoalobin" and insert --oxyhemoglobin--.

Amendment dated May 14, 2004. See Attachment B.

Column 28, line 63, delete "of the patient".

Applicant error.

Column 30, line 7, delete "of the patient".

Applicant error.


These errors occurred in good faith and correction thereof does not involve such changes in the patent as would constitute new matter or would require re-examination. It is requested that a Certificate of Correction be issued and returned to us.

Attached hereto, in duplicate, is Form PTO-1050, with at least one copy being suitable for printing.

A duplicate of this document is attached.

Respectfully submitted,

FULWIDER PATTON LEE & UTECHT, LLP

By: 
David G. Parkhurst
Registration No. 29,422

DGP:ck
Enclosures

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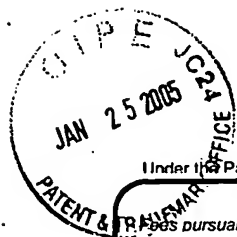
TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/040,937	
	Filing Date	December 28, 2001	
	First Named Inventor	Philip R. Westbrook	
	Art Unit	3736	
	Examiner Name	Patricia C. Mallari	
Total Number of Pages in This Submission		Attorney Docket Number	ABMON 64568

ENCLOSURES <i>(check all that apply)</i>		
<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Technology Center (TC)
<input checked="" type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment / Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) <i>(please identify below):</i>
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	Return Postcard Req. for Certificate of Correction Certificate of Correction
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<input type="checkbox"/> Certified Copy of Priority Document(s)	Remarks	
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	FULWIDER PATTON LEE & UTECHT, LLP Customer No. 24,201
Signature	
Date	January 21, 2005

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the			
Typed or printed name	David G. Parkhurst		
Signature		Date	January 21, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



PTO/SB/17 (12-04v2)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Effective on 12/08/2004.

As pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL

For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 100.00

Complete if Known

Application Number	10/040,937
Filing Date	December 28, 2001
First Named Inventor	Philip R. Westbrook
Examiner Name	Patricia C. Mallari
Art Unit	3736
Attorney Docket No.	ABMON 64568

METHOD OF PAYMENT (check all that apply)☒ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: 06-2425 Deposit Account Name: Fulwider Patton ...

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17☐ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 (including Reissues)

Fee (\$)

Small Entity Fee (\$)

Each independent claim over 3 (including Reissues)

50

25

Multiple dependent claims

200

100

360

180

Total Claims**Extra Claims****Fee (\$)****Fee Paid (\$)**

- 20 or HP = _____ x _____ = _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims**Extra Claims****Fee (\$)****Fee Paid (\$)**

- 3 or HP = _____ x _____ = _____

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims**Fee (\$)****Fee Paid (\$)****3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets**Extra Sheets****Number of each additional 50 or fraction thereof****Fee (\$)****Fee Paid (\$)**

- 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Fees Paid (\$)Other (e.g., late filing surcharge): Req. for Certificate of Correction

100.00

SUBMITTED BY

Signature

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(Attorney/Agent)

Telephone

310-824-5555

Name (Print/Type)

David G. Parkhurst

Date January 21, 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

The diode current consists of a component proportional to reflected light I_s and "dark" current I_d that depends on temperature and diode construction. From basic electrical laws, turning to Fig. 13, the values obtained after A/D conversion N are proportional to the relationship: $N \sim G \cdot (I_s + I_d - I_0)$. The value needed for the reflected light inducing circuit is:

5 $I_s \sim N/G + I_0 - I_d$, where G is amplifier transconductance [G]. During the adjustment phase, the values I_0 and G are set by digital potentiometers (multiplying D/A converters) so that the amplifier output signal is set within the A/D converter dynamic range with sufficient AC amplitude. Both values (G and I_0) can be adjusted during operation, when required.

For each sample that is acquired, three measurements are performed: one with the red
10 LED on, one with the infrared LED on, and one with both LEDs off. The result of the third measurement is subtracted from the previous two, because it contains all offsets (amplifier and A/D converters) and ambient light influence. Taking into account that, for the SpO_2 calculation, a ratio of AC to DC component of light signal is required, the ratio for both light components, red and infrared, can be obtained. Min and max indexes correspond to values
15 on minimum and maximum blood pressure, respectively, during heart activity period.

$$R_l = AC/DC = (I_{smax} - I_{smin}) / ((I_{smax} + I_{smin})/2) = (N_{max} - N_{min}) / ((N_{max} + N_{min})/2 + N_0)$$

The constant $N_0 = G \cdot (I_0 - I_d)$ can be determined by calculation using circuit component values or obtained by calibrating each device.

C. Smoothing of the calculated SpO_2 values

20 The SpO_2 values calculated from red and infrared signals should be smoothed in order to reduce the effects of noise and increase the detection of desaturation events. In the

providing the stored pulse oximetry data signals to an expert system that receives the stored pulse oximetry data signals, wherein the expert system performs an analysis and generates a sleep apnea risk evaluation report of the patient, the expert system receiving the pulse oximetry data signals and utilizing a database to perform an analysis and generate the evaluation report of the patient; and

providing said pulse oximetry data signals to computing circuitry that responds to the received pulse oximetry data signals by identifying a respiratory event of the patient, wherein the computing circuitry identifies said respiratory event in response to detecting pulse oximetry data signals that indicate a threshold level of oxyhemoglobin desaturation;

~~A method as defined in claim 56,~~ wherein the threshold level of oxyhemoglobin desaturation is variable, and the variable threshold level is based on at least one of the following criteria: peak oxyhemoglobin saturation, nadir, and peak oxyhemoglobin resaturation.

Claim 61 (Currently amended) A method of evaluating risk of sleep apnea in a patient, the method comprising:

attaching a physiological monitoring system to a patient's forehead, wherein the physiological monitoring system includes (a) a pulse oximetry sensor and circuitry that detects oxyhemoglobin saturation and pulse rate of the patient and produces corresponding pulse oximetry data signals, and (b) a storage memory that stores the pulse oximetry data signals produced by said pulse oximetry sensor, thereby eliminating all lead wires between the patient and the storage memory;

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,811,538 B2
DATED : November 2, 2004
INVENTOR(S) : Philip R. Westbrook et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10,

Line 41, delete "ate" and insert --rate--.

Column 17,

Line 4, after " $(N_{\max}-N_{\min})$ /" insert --(--.

Column 18,

Line 48, delete "s ".

Column 26,

Line 15, delete "reference" and insert --referenced--.

Column 27,

Line 25, delete "of the patient".

Column 28,

Line 31, delete "oxyhemoalobin" and insert --oxyhemoglobin--.

Line 63, delete "of the patient".

Column 30,

Line 7, delete "of the patient".

MAILING ADDRESS OF SENDER:

**David G. Parkurst
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6060 Center Drive, 10th Floor
Los Angeles, CA 90045**

PATENT NO. 6,811,538 B2

No. of additional copies

Page 1 of 1

This collection of information is required by 37 CFR 1.322 and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing the burden, should be sent to the Chief of Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450 Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORM TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner of Patents P.O. Box 1450 Alexandria, VA 22313-1450

TO: _____ On (note date): 1 FEB 2005 Pat. No. 6816538

Team Leaders Initials
INFO SUPPLIED BY: _____

OAC/LDRC Initials

10/040937

SECOND REQUEST (DIFFERENT CORRECITONS), SUPERSEDE OR RECONSIDERATION
(OAC OR LDRC, USE A RED PEN FOR COMPLETING INFO, ON THIS COVER SHEET) (11/2002 cbn)

Team Leader, an Office Automation Clerk may assist you by supplying data from CofC Database (Current & History), PALM, and copies from Intranet, to determine type of request (second request, supersede, and/or reconsideration) and to determine if there were any errors made in decisions and/or publishing are attributable. Team Leader, check appropriate boxes below, key record (if necessary) and forward to JCWS, to order file and assign file to an LIE, to EXPEDITE.

Team Leader, DO NOT ORDER FILE.

↓ **MRD** (for request attached to this cover sheet): / / (Team Leader have LDRC, stamp same MRD on 1050s.)

S File Charged to (in PALM): **Date Charged to Loc.:** / /

T Information re most recent record in CofC database (Check Current & History)

A MRD: / / **Examiner (LIE's initials):**

P Date Assigned: / / **Turned In:** / /

L CofC Issued: / / **CofC Denied:** / / **Updated:** Y / N **Date:** / /

E Patent number listed on C of C listing in OG ((circle one) Y / N

CofC Issued for this record is attached to patent on Internet ((circle one) Y / N

H New/different correction(s) requested. Check Intranet or with RTIS. ((circle one) Y / N

E ☐ Duplicate (same heading and corrections published/issued CofC on Intranet. ((circle one) Y / N

R ☐ Substitute or corrected request. Locate the original request (check with JCWS and RTIS).

E ☐ Second Request (another) requesting new/different corrections or additional corrections.

↑ ☒ Status Ltr. and/or Outstanding Request

TEAM LEADER, DO NOT ORDER FILE. If necessary, call attorney/applicant for assistance in

determining if new/different corrections. Team Leader, key new a record on: 2 13 105

Count with CofCs keyed rec'd same week, determine and note if "P", "R", or "RTC".

Mark through any corrections on 1050, that were appropriately published; or JCWS assign to:

☐ Reconsideration ☐ Supersede ☐ Special CofC ☐ Erratum ☐ Expedite CofC

Team Leader, determine if a Request for a Corrected CofC (Supersede) or Reconsideration, due to error in decisions or keying, attributable to (check the appropriate box, below):

☐ **RTIS**
Keying Error

☐ **LIE:**
LIE Processing or
Decision Error

☐ **OFFICE**
Error in Entry of Document
or Ex. Decision

☐ **ATTY.**
1.323 Consideration
or Petition Required

If errors are attributable to LIE, use guidelines for appropriately notifying the LIE and recording errors (make copies supporting that the LIE made error, attach copies to this cover sheet, keeping copies for your records, and forward copies to CBN, at the end of each month).

☐ JW or OL, locate request for CofC published on: / / and return to:
(Circle OAC Initials)

☒ Team Leader keyed record on 2/3/05 ☐ Post card Printed by Tasneem
(Team Leaders, give all second requests to Tasneem, to print a post card.)

☐ JCWS, order file, match paper (MRD) and assign or reassign to LIE/to: / LIE,
see your Team Leader for assistance.

Comments/ Instructions: